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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/546,004	08/18/2005	Daisuke Adachi	MAT-8729US	8651
23122	7590	06/28/2007		
RATNERPRESTIA			EXAMINER	
P O BOX 980			HINES, ANNE M	
VALLEY FORGE, PA 19482-0980				
			ART UNIT	PAPER NUMBER
			2879	
			MAIL DATE	DELIVERY MODE
			06/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/546,004	Applicant(s) ADACHI ET AL.	
	Examiner Anne M. Hines	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/07 and 8/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment, filed on August 18, 2005, has been entered and acknowledged by the Examiner.

Claims 1-10 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanda et al. (US 5851732) in view of Sugishita et al. (US 4424251) and Imai et al. (US 6664029).

Regarding claims 1 and 2, Kanda teaches a plasma display panel having a pair of substrates (Fig. 1, 5 & 6; Column 1, lines 33-39) with a transparent front substrate provided with scan electrodes and sustain electrodes (Fig. 1, 1 & 7 & 10; Column 3, lines 14-19), a rear substrate having phosphor layers (Fig. 1, 3; Column 1, lines 30-31), wherein the display electrodes comprise a transparent electrode (Fig. 1, 1; Column 3, lines 13-14) and a bus electrode (Fig. 1, 7 & 10; Column 3, lines 18-19); the bus electrode including a plurality of electrode layers, and at least one of the electrode layers is composed of a black layer made of ruthenium dioxide, glass frit, a solvent, and

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a vehicle having a thickness of 5 microns (Fig. 1, 10; Column 3, lines 18-19; Column 13, line 62 to Column 14, line 67; Column 13, lines 12-15) and where the electrodes on the front panel are insulated (Fig. 1, 8; Column 1, line 42). Kanda fails to disclose the resistivity of the black layer or a light-shielding layer formed in non-discharge areas between the display electrodes having a resistivity of 10^6 ohm-cm or greater.

In the same field of endeavor of resistor compositions comprising ruthenium dioxide, glass frit, a vehicle, and a solvent, Sugishita teaches a composition like Kanda's with a sheet resistivity of 10^3 ohm/square (Column 3, lines 53-64). Since Kanda teaches the thickness of a black layer resistor film as 5 microns, and Sugishita teaches a similar composition with a sheet resistivity of 10^3 ohm/square, the Examiner considers that it would have been obvious to one of ordinary skill in the art to have the black layer of the bus electrode have a sheet thickness multiplied by the resistivity of 2 ohm-cm^2 or less in order to provide a black layer of a bus electrode that improves contrast and conducts between the transparent electrode and the other layer of the bus electrode. Note: $10^3 \text{ ohm-square} * (5 \text{ micron thickness} == 0.0005\text{cm})^2 = 2.5 \times 10^{-4} \text{ ohm-cm}$. Since sheet resistance is resistivity over thickness ($R_s = \rho/t$).

In the same field of endeavor of plasma display panels, Imai teaches having a black stripe formed between display electrodes of a plasma display panel in order to enhance the contrast of the display (Column 17, lines 16-27; Column 14, line 63 to Column 15, line 14) and wherein the black stripe has a resistivity of 10^{10} ohm-cm (Column 22, lines 25-32).

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Therefore, it would have been obvious to one of ordinary skill in the art to modify Kanda to have a sheet thickness multiplied by the resistivity of 2 ohm-cm^2 or less and to have a light-shielding layer formed in non-discharge areas between the display electrodes having a resistivity of 10^6 ohm-cm or greater, in order to improve contrast and have a black layer of a bus electrode that conducts between the transparent electrode and the other layer of the bus electrode, as taught by Sugishita and Imai.

Regarding claims 3-4 and 7-8, Kanda further discloses wherein the black layer includes black pigment and conductive material (Column 13, line 62 to Column 14, line 67). Note that the Examiner considers Kanda's disclosure of RuO_2 , a conductive black powder, to meet both the requirements of a black pigment and a conductive material.

Regarding claims 5-6 and 9-10, Kanda further discloses wherein black layer composition further includes a metal component such as silver (Column 13, line 62 to Column 14, line 67).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anne M Hines
Patent Examiner
Art Unit 2879



MARICELI SANTIAGO
PRIMARY EXAMINER